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CLAIMS

1. An endodontic instrument, which comprises:

a handle having an elongated base with a threaded projection at a first end, the projection having a recessed distal surface capable of cupping a first terminus portion of an elongated plastic grip attached to an endodontic file; and

a cap containing a channel extending through a first end of said cap with a first portion of the channel being threaded for mating with the projection of the elongated base of said endodontic instrument handle, said cap possessing a side, and said cap also having a second end containing an aperture through which an endodontic file can project, the diameter of the aperture being selected to be larger than the diameter of the endodontic file but smaller than the diameter of a plastic grip attached to the endodontic file, said cap further having a recessed interior surface capable of cupping a second terminus portion of an elongated plastic grip attached to an endodontic file.

2. The endodontic instrument as recited in claim 1, wherein:

the elongated base has a maximum outer diameter;

said cap has a maximum outer diameter; and

the maximum outer diameter of said cap is substantially the same as the maximum outer diameter of the elongated base.

3. The endodontic instrument as recited in claim 1, further comprising:

an endodontic file with a tip and also with an elongated plastic grip having first and second terminus portions, said grip attached to said endodontic file at an end opposite to the tip, said endodontic file extending through the aperture in the second end of said cap and the attached plastic grip being contained within the channel of said cap so that the recessed distal surface of the projection cups the first terminus portion of the plastic grip and the recessed interior surface of the cap cups the second terminus portion of the plastic grip through a compression fit achieved from the threaded mating of the elongated base and cap.

4. The endodontic instrument as recited in claim 3, wherein:

the elongated base has a maximum outer diameter;

said cap has a maximum outer diameter; and

the maximum outer diameter of said cap is substantially the same as the maximum outer diameter of the elongated base.

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5. The endodontic instrument of claim 3, wherein the first and second terminus portions of the elongated plastic grip have distally curving surfaces.

6. The endodontic instrument of claim 3, wherein the first and second terminus portions of the elongated plastic grip have partially rounded ends.

5 7. The endodontic instrument of claim 1, wherein the tip of the endodontic file is not capable of being variably positioned within the instrument along the Y axis through a compression fit.

8. The endodontic instrument as recited in claim 1, wherein:
the aperture in the second end of said cap extends to the side of said cap and, on such side, is
10 enlarged to dimensions sufficient to permit the introduction in the channel of the plastic grip attached to the endodontic file.

9. The endodontic instrument as recited in claim 8, wherein:
the elongated base has a maximum outer diameter;
said cap has a maximum outer diameter; and

15 the maximum outer diameter of said cap is substantially the same as the maximum outer diameter of the elongated base.

10. The endodontic instrument as recited in claim 1, the handle further having a plurality of longitudinally oriented recessed grooves adjacent to the first end of the elongated base for increasing the handle's surface area.

20 11. The endodontic instrument as recited in claim 1, the cap further having a plurality of longitudinally oriented recessed grooves for increasing the cap's surface area.

12. The endodontic instrument as recited in claim 10, the handle further having a plurality of transversely oriented recessed grooves on the elongated base for increasing the handle's surface area, said transversely oriented grooves being shallower and greater in number than the
25 longitudinally oriented recessed grooves.

13. An endodontic instrument, which comprises:

a handle having an elongated base with a threaded projection at a first end and a maximum outer diameter, the projection further having a recessed distal surface capable of cupping a first terminus portion of a plastic grip attached to an endodontic file;

30 a cap having a maximum outer diameter substantially the same as the maximum outer diameter of the elongated base and containing a channel extending through a first end of said cap

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with a first portion of the channel being threaded for mating with the projection of the elongated base of said endodontic instrument handle, said cap possessing a side, and said cap also having a second end containing an aperture through which an endodontic file can project, the diameter of the aperture being selected to be larger than the diameter of the endodontic file but smaller than
5 the diameter of an elongated plastic handle attached to an endodontic file, the aperture extending to the side of said cap and, on such side, is enlarged to dimensions sufficient to permit the introduction in the channel of an elongated plastic grip attached to an endodontic file, said cap further having a recessed interior surface capable of cupping a first terminus portion of an elongated plastic grip attached to an endodontic file; and

10 an endodontic file with a tip and also with an elongated plastic grip having first and second terminus portions, said grip attached to said endodontic file at an end opposite to the tip, said endodontic file extending through the aperture in the second end of said cap and the attached plastic grip being contained within the channel of said cap so that the recessed distal surface of the projection cups the first terminus portion of the elongated plastic grip and the recessed
15 interior surface of the cap cups the second terminus portion of the elongated plastic grip through a compression fit achieved from the threaded mating of the elongated base and cap.

14. The endodontic instrument as recited in claim 13, the handle further having a plurality of longitudinally oriented recessed grooves adjacent to the first end of the elongated base for increasing the handle's grip surface area and for providing rotational control of the instrument
20 when in use.

15. The endodontic instrument as recited in claim 13, the cap further having a plurality of longitudinally oriented recessed grooves for increasing the cap's grip surface area and for providing rotational control of the instrument when in use.

16. The endodontic instrument as recited in claim 13, the handle further having a plurality of
25 transversely oriented recessed grooves on the elongated base for increasing the handle's grip surface area and for reducing longitudinal slippage, said transversely oriented grooves being shallower and greater in number than the longitudinally oriented recessed grooves.

17. The endodontic instrument of claim 13, wherein the tip of the endodontic file is not capable of being variably positioned within the instrument along the Y axis through a
30 compression fit.

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18. The endodontic instrument of claim 13 wherein the first and second terminus portions of the elongated plastic grip have distally curving surfaces.

19. The endodontic instrument of claim 13 wherein the first and second terminus portions of the elongated grip have partially rounded ends.

5 20. An endodontic instrument, which comprises:

a handle having an elongated base with a threaded projection at a first end and a maximum outer diameter, the handle further having a plurality of longitudinally oriented recessed grooves adjacent to the first end of the elongated base for increasing grip surface area on the instrument, the handle further having a plurality of transversely oriented recessed grooves on the elongated base for increasing grip surface on the elongated base, said transversely oriented grooves being shallower and greater in number than the longitudinally oriented recessed grooves, and the projection having a recessed distal surface capable of cupping a first terminus portion of a plastic grip attached to an endodontic file;

15 a cap having a maximum outer diameter substantially the same as the maximum outer diameter of the elongated base and containing a channel extending through a first end of said cap with a first portion of the channel being threaded for mating with the projection of the elongated base of said endodontic instrument handle, said cap possessing a side, and said cap also having a second end containing an aperture through which an endodontic file can project, the diameter of the aperture being selected to be larger than the diameter of the endodontic file but smaller than the diameter of an elongated plastic grip attached to the endodontic file, the aperture extending to the side of said cap and, on such side, is enlarged to dimensions sufficient to permit the introduction in the channel of an elongated plastic grip attached to an endodontic file, said cap further having a recessed interior surface capable of cupping a second terminus portion of an elongated plastic grip attached to an endodontic file, said cap further having a plurality of
25 longitudinally oriented recessed grooves for increasing the cap's grip surface area and for providing rotational control of the instrument when in use, said cap further having a plurality of transversely oriented recess grooves for increasing the caps grip surface area and for reducing longitudinal slippage when in use, said transversely oriented grooves being shallower and greater in number than the longitudinally oriented recessed grooves; and

30 an endodontic file with a tip and also with an elongated plastic grip having first and second terminus portions, said grip attached to said endodontic file at an end opposite to the tip,

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said endodontic file extending through the aperture in the second end of said cap and the attached plastic grip being contained within the channel of said cap so that the recessed distal surface of the projection cups the first terminus portion of the plastic grip and the recessed interior surface of the cap cups the second terminus portion of the plastic grip through a compression fit achieved
5 from the threaded mating of the elongated base and cap.

21. The endodontic instrument of claim 20, wherein the tip of the endodontic file is not capable of being variably positioned within the instrument along the Y axis through a compression fit.

22. The endodontic instrument of claim 20 wherein the first and second terminus
10 portions of the elongated plastic grip have distally curving surfaces.

23. The endodontic instrument of claim 20 wherein the first and second terminus portions of the elongated grip have partially rounded ends.